

Quadratics Research Project
Advanced Algebra

Name _____

Date _____

Want to hear this assignment as opposed to read it? Check out the class wiki! Go to the Chapter 6 page for your class. It's at the top of that page

Today, you will be working with a partner on an exploration into quadratics. Through the first half of chapter 6, we have been introduced to quadratics and some basic uses of quadratics in the real world. Today, you are going to conduct some research into real world uses of quadratics. Throughout the remainder of the chapter, you will be working on collecting your information. At the end of this research project, you will write a script of a situation you have researched and record it as an audio file. These files will be collected and posted on the web on our class wiki for the whole world to hear.

Before you do any research, you should refer to the rubric. Your goal should be to aim to get a score in the "4" column of each category. Let's take a look at them:

- **Ideas/Research Questions:** You need to have (at least) 4 good research questions. These must be written down and turned in with your script when you submit your audio file in the end. These questions are ones that you will come up with. More on this later.
- **Content:** When writing your script, you are going to want to have content that does more than just scratch the surface. Go in depth into the details.
- **Source Information:** Anything that you may want to use needs to be properly documented. For more on proper documentation, refer to the class wiki.
- **Quality of Sources:** You need to find sources that are reliable. Wikipedia is not reliable and will not be counted as a quality source.
- **Mathematical Concepts:** Your script is going to be about math, so you want to make sure that you have a full understanding of the concepts covering the topics.
- **Mathematical Errors:** Double-check your work/facts to make sure they are correct.
- **Explanation:** Make sure to give a full, detailed explanation of your topic.
- **Mathematical Terminology and Notation:** Don't call a quadratic a line!
- **Presentation:** You'll be digitally recording yourself. You'll have a script that you just have to read off of. And you won't need any technology other than a phone!

Okay, so this hasn't quite told you yet what your goal is in this project. And no, this is not a replacement for the end of the chapter assignment (have you begun working on that yet?). The main thing behind this project is to give yourself a chance to realize a few things. First, you probably have some questions about quadratics, parabolas, and their applications in the real world, specifically how it relates to your own life. You'll be able to devise a question for yourself to guide your research to help answer that question.

Second, you might not have confidence in yourself that you can figure out "math things" on your own, or that you might be "bad" at math, or that you "can't do math." That's not

true. You CAN figure out math things on your own (or with the help of a partner), and you don't always need to rely on a teacher to teach you things. Teachers are here to help guide you toward realizing this, as well as to keep you on the path when you may wander. Of course, you have to decide to take the help to get back on the path.

You are NOT bad at math. We all learn in different ways, and we each need to search and explore different ways of learning (and showing that you have learned) in order to find out what kind of learner we each are. So you may not test well, but are there other ways to show what you can and have learned? (Projects are one such way.)

And you CAN do math. Does that mean it will come easily and without work? True, there are some who are "mathematically inclined," and seem to pick up concepts quicker than others. Don't compare yourself to them. Think about what you need to do in order to learn the math. If you're not happy with your grades, ask yourself why your grades may be what they are? Are you doing what is necessary to learn? Are you doing the reading? What about the homework? Are you seeking extra help? When the final bell rings on the school day, do you just drop all your school stuff and hang out? If the things you have been doing aren't working, you need to figure out what you need to do to fix it! (This applies to classes other than math, as well as things outside of school, too.)

So, what is this project? This is your chance to research some of the questions you have on quadratics. It is your chance to look for how these ideas can be applied in a field you are interested in. And then you are going to do the research, check for reliability of your sources, and then create something new to share with the world. Who knows? Maybe next year, some student in another part of the world will find your audio report and learn something new, something that they were never going to learn in their classroom?

So, after all that, you may have a few questions, such as, "What am I supposed to do today?" Have this completed by tomorrow (I will be collecting it!):

1. Formulate ideas and questions about quadratics to drive your research. Come up with at least one question specific to a field you are interested in. You will notice that the rubric is looking for 4 reasonable ideas/questions, but you should come up with more. You might not be able to come up with all the questions before your research, but you should come up with more as you start your research.
2. You should start finding sources. Use a Word/Pages document to copy/paste the URL's you are looking at using, as well as any ideas that you find on those pages. Your questions should also be in this document.

Tomorrow in class, you will be submitting this file electronically to my computer, so make sure that both you and your partner have a copy saved, in case one of you happens to be absent.